

Streblidae from the French Ivory Coast, with a Description of New Species (*Diptera*)

by

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(Two figures)

Dr. V. AELLEN of the "Muséum d'Histoire Naturelle", Geneva, very kindly sent me a small but interesting collection of Streblidae, made by him during his scientific expedition to the French Ivory Coast. Among the specimens of this collection were two new species which are described below. A specimen from French Guinea is also recorded. The types of new species are deposited in the "Muséum d'Histoire Naturelle" of Geneva.

Raymondia huberi Frauenfeld, 1855.

The type came from a bat collected in Egypt. The species has been recorded by FALCOZ (1923), from *Triaenops persicus* Dobs., from British East Africa and Abyssinia, and from *Asellia tridens* (Geoff.), from German East Africa. Mr. H. HOOGSTRAAL, Head of the Department of Medical Zoology, U.S. Naval Medical Research Unit No. 3, Cairo, Egypt, found it on *Asellia tridens* (Geoff.), at Bir Abraq in the South-Eastern Egypt. This specimen has been identified by me.

Present record: one male, from *Miniopterus inflatus villiersi* Aellen, Grotte du Marché, Dalaba, French Guinea, 16.4.1954.

A. VILLIER's collection, Musée de l'Ifan (Institut Français d'Afrique Noire), No. 54-1-1 to 54-1-8.

Raymondia intermedia Jobling, 1936.

This widely distributed Ethiopian species parasitizes five species of the genus *Rhinolophus*. It has been found in Sierra Leone, on *Rhinolophus axillaris* Allen, *R. landeri* Martin and *Eptesicus tenuipinnis* (Peters).

Present record: one specimen, female, from *Hipposideros cyclops* (Temminck), 30.7.1953, No. 665, and two specimens, male and female, from the same host, 31.7.1953, No. 666, collected by V. AELLEN in the forest of Banco, Abidjan, French Ivory Coast.

Raymondia brachyphysa sp.n.

At first I intended to describe this new species provisionally, because in its general structure it very much resembled *Raymondia intermedia* Jobling. But more detailed examination of the specimen showed that its genitalia have a very different structure. Its right gonapophysis is not falcate as that of *R. intermedia* (Fig. 1, C), and the apodeme of the aedaegus (*a.ae*) and that of the gonapophyses (*a.go*) are very thin and short (Fig. 1, A). In this last character it somewhat resembles *R. setiloba* Jobling, 1954. However, from this species it can easily be separated by the absence of numerous setae on the parts of the first abdominal tergite, and by the form of the right gonapophysis. It also superficially resembles the other species, *R. simplex* Jobling, 1955. But in the latter species the apodemes are very much thicker and are flat, and the setae of the marginal cell of the wings have a different arrangement.

Head as broad as the distance between the humeral calli, more or less trapezoidal, with broad mediavertex. Each latero-vertex with small thin setae on the inner margin, and with a few slightly stronger setae in the middle; its lateral and posterior margins bear strong setae, one arising from the corner extending to the middle of the prescutum. The ventral surface of the head resembles that of *R. intermedia*; it has eight strong setae on each side of the membranous middle part, a few very small setae on the ventral margin of each concave part, and four very small but thick setae

in the most posterior rounded part. Genae and postgenae bear small setae. Antennae presenting no distinctive character. Palpi as those of *R. intermedia*, but much more vertical. Theca of labium broader than long, with broadly rounded anterior margin (Fig. 1, A, *lab*).

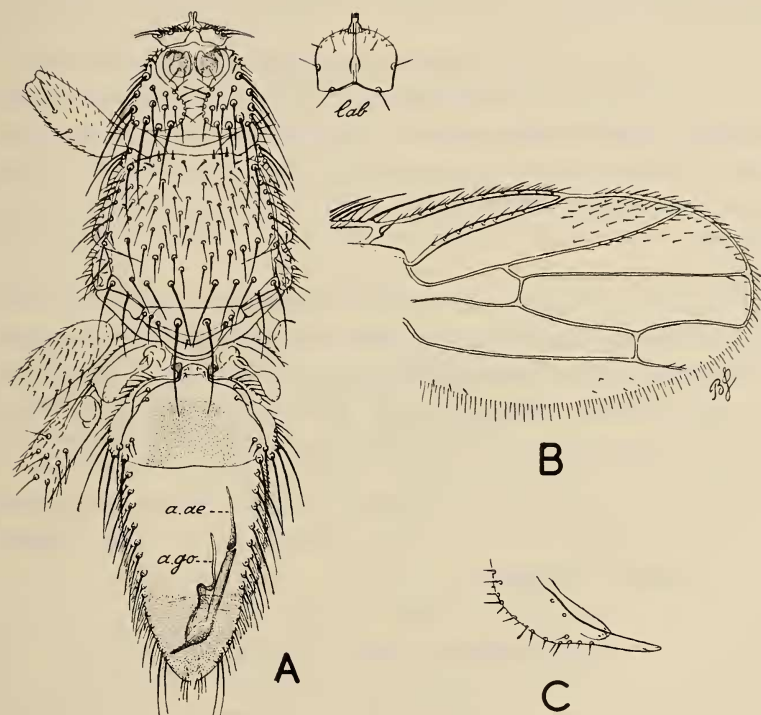


FIG. 1.

A, dorsal view of *Raymondia brachyphysa* sp.n.; *a.ae.*, apodeme of aedeagus *a.go.*, apodeme of gonapophyses; *lab*, labium; B, wing; C, right gonapophysis.

Thorax 0.4 mm long and 0.5 mm broad. Anterior margin of prescutum almost transverse in the middle; lateral margins of the prescutum and its posterior parts near the transverse suture with strong setae; the rest of the surface bears many thin setae which are slightly longer than the distance between them. Scutum with a row of six strong setae across the middle. Scutellum with usual two long setae in the middle, a few very much smaller setae in the lateral parts, and with one very small seta asymmetrically

placed near the middle of its broadly angular posterior margin (It should be mentioned here that in some specimens of the species which are related to *R. intermedia*, the number and arrangement of the marginal setae of the scutellum may show considerable variation). The ventral surface of the thorax bears the same setae as those on the prescutum. Legs presenting no distinctive character.

Wings 1.5 mm long; second longitudinal vein slightly curved; third longitudinal vein straight; fourth longitudinal vein slightly divergent from the third near the apex of the wing; marginal cell with a patch of setae in the apical part; a few setae in the antero-dorsal part of the sub-marginal cell. Alula very much reduced, without seta. Halteres and calypters presenting no distinctive character.

Abdomen resembles that of *R. intermedia*. Lobes of the first tergite with a few setae; hypopygeum conical; apodeme of aedeagus club-shaped, that of gonapophyses very thin and strongly curved in its basal part; both apodemes short and of the same length. The right gonapophysis (Fig. 1, C) somewhat claw-shaped, with setae only on its convex margin.

French Ivory Coast: Holotype, male, from *Hipposideros cyclops* (Temminck), forest of Banco, Abidjan, 31.7.1953 collected by V. AELLEN, No. 666.

Raymondioides leleupi Jobling, 1954.

This is the second record of this species. It has originally been described from the two specimens which were taken from either *Miniopterus* sp. or *Hipposideros caffer* in the Belgian Congo.

Present record: a single specimen, female, from *Hipposideros caffer guineensis* Andersen, collected by V. AELLEN on the rock of the Panthère Blanche, Duékoué, French Ivory Coast, 13.5.1953, No. 401.

Ascodipteron megastigmatos sp.n.

This new species more or less closely resembles *Ascodipteron jonesi* Jobling, 1952, from Sierra Leone, and it parasitizes the same genus of bats. In these two species the laterovertices have almost the same shape, and the theca of the labium is short and broad

when examined from the dorsal aspect. A more striking resemblance is present in their pteropleurons and in the cerci. The latter are more or less triangular or fan-shaped, and bear each three long and a few very small setae. It is quite obvious that this resemblance does not represent convergence, which is a very common phenomenon in the Streblidae, but indicates the relationship of these two species.

Apart from this resemblance, the species has several distinctive characters by which it can be separated from others. In *A. jonesi* and in all the other species which are known at present, the apical part of each postgena lies far below the dorsal margin of the mesopleuron, and the thorax of these species is higher than long. But in *A. megastigmatus* the apical part of each gena lies near the anterior margin of the mesopleuron, while the thorax is longer than high and is more or less rhomboidal when examined from the lateral aspect. In the other species each humeral callus lies near the anterior margin of the mesopleuron and the anterior spiracle is nearly half way between the dorsal and the ventral margins of this sclerite; whereas in *A. megastigmatus* each humeral callus is posterior to the anterior margin of the mesopleuron, and together with the anterior spiracle it lies close to the dorsal margin of this sclerite.

This comparison shows that the thorax of *A. megastigmatus* has been modified by environmental conditions, of which the pressure inside the skin of the host was probably the main factor. It has altered the position of the dorsal sclerites of the thorax in relation to the sternal region, shifting them backwards, and has also modified the shape of the sclerites of the pleural regions, inclining them at an angle of about 40° to the horizontal plane.

The most noticeable changes are seen in the mesopleuron. Its antero-dorsal part has been obliterated as far as the humeral callus, while the postero-dorsal part has become displaced postero-ventrally. These changes affected the membranous region which lies posterior to this sclerite, altering its shape and position. Thus, in the other species this region is broad and vertical, whereas in *A. megastigmatus* it has become very narrow and strongly inclined.

In the following description the form of the abdomen is not given, as it was very much distorted. It should also be mentioned that in the species of this genus, the chaetotaxy of the sclerites of

one side of the thorax may vary considerably from that of the sclerites of the opposite side. The same variation also occurs on the remaining segments of the legs.

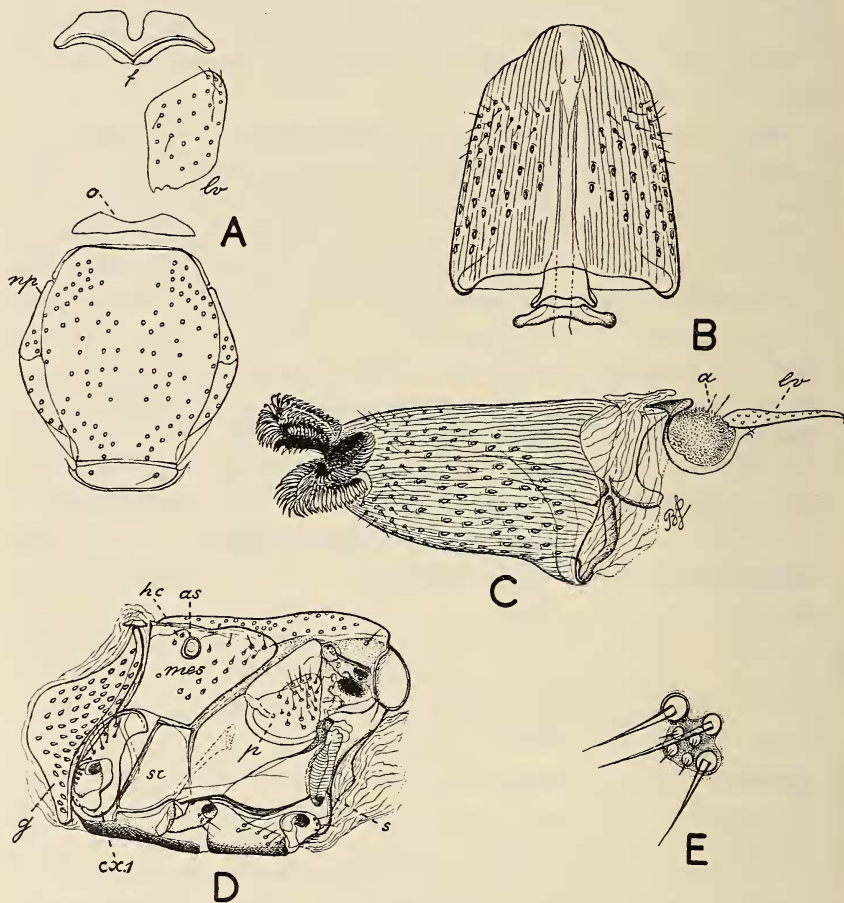


FIG. 2.

Ascodipteron megastigmatus sp.n., A, dorsal sclerites of head and thorax; B, dorsal view of theca of labium; C, lateral view of labium; D, same of thorax; E, cercus; a, antenna; as, anterior spiracle; cx.1, fore coxa; f, frons; g, gena; hc, humeral callus; lv, laterovertex; mes, mesopleuron; np, notopleuron; o, occipital sclerite; p, pteropleuron; s, stump of haltere; st, sternopleuron.

Theca of labium 0.5 mm long and 0.4 mm broad in its posterior parts (Fig. 2, B), with thin setae in the anterior part, and with rather darkly pigmented peg-like setae posterior to the latter

which form more or less distinct diagonal rows on the dorsal surface. Anterior part of frons with deep excision in the middle, which divides it in two wing-shaped halves (Fig. 2, A, *f*). Each laterovertex (*lv*) somewhat rhomboidal, with rounded anterior and postero-lateral corners, and with two small excisions in the posterior margin; its surface bears thin setae arranged in four irregular rows. Occipital sclerite broadly concave in the middle (*o*), and having narrowly angular lateral parts. Each gena as high as the antero-lateral margin of the thorax (Fig. 2, D, *g*), very broad in the middle, with curved dorsal part, which ends in a small rounded point; its surface bears many irregularly arranged peg-like setae. Character of the antennae not available owing to distortion.

Thorax longer than high. Mesonotum 0.4 mm long and 0.3 mm broad. Prescutoscutum with almost straight anterior and posterior margins, and convex lateral margins; its chaetotaxy is shown in Fig. 2, A. Scutellum very broad, ovoid when examined from the lateral aspect, with two setae. Notopleuron (*np*) with four setae in the posterior part. Postero-dorsal part of mesopleuron strongly produced, rounded apically, with broadly convex dorsal margin; posterior margin almost straight; anterior margin slightly concave; ventral margin straight except in its anterior part, where it bends ventrally, forming with the anterior margin a sharp angle; posterior part of mesopleuron bears very small peg-like scattered setae and a few thin setae. Humeral callus with two very minute setae, and lies near the dorsal margin of the mesopleuron (*hc*). Anterior spiracle large (*as*), with distinct peritreme; it lies ventral, but slightly posterior to the humeral callus. Pteropleuron as that of *A. jonesi* (*p*), with many thin setae in the upper half, and a few very minute setae below the latter. Anterior margin of sternopleuron straight (*st*), except its most ventral part, and together with the straight dorsal margin it forms an angle of about 95°; posterior margin thin, slightly curves outwards, and not very distinct in its ventral part; ventral margin thick, convex and together with the anterior margin ends in a thin short process by which the sternopleuron is attached to the prosternum.

Coxa of the fore-leg half as high as the thorax (*cx.1*) with a few thin setae in the anterior part; its dorsal part curved and produced into a broadly angular lobe; anterior margin broadly convex;

ventral part below the trochanter evenly rounded. The remaining segments of the other legs presenting no distinctive character.

Each cercus more or less triangular (Fig. 2, E), with three long setae arising from large thecae, and with four or three very small setae in the middle. Posterior end of abdomen without setae between the sixth abdominal spiracles and the slit-like aperture.

French Ivory Coast: Holotype, female, from *Hipposideros caffer guineensis* Andersen, rock of the Panthère Blanche, Duékoué, 13.5.1953, collected by V. AELLEN, No. 401.

REFERENCES

- FALCOZ, L. 1923. *Biospeologica*. No. XLIX *Pupipara* (Diptères). Arch. Zool. exp. gen. 61: 521.
- FRAUENFELD, J. 1855. *Über eine neue Fliegengattung Raymondia aus der Familie der Coriaceen, nebst Beschreibung zweier Arten derselben*. S.B. Akad. Wiss. Wien. 18: 320
- JOBLING, B. 1936. *A revision of the subfamilies of the Streblidae and the genera of the subfamily Streblinae (Diptera Acalyp- terae) including a redescription of Metelasmus pseudop- terus Coquillett and a description of two new species from Africa*. Parasitology 28: 355.
- 1952. *Description of two new species of Ascodipteron from Africa and one species of Nycteribocsa from Madagascar (Diptera Streblidae)*. Parasitology 42: 126.
- 1954. *Streblidae from the Belgian Congo, with a description of a new genus and three new species (Diptera)*. Rev. Zool. Bot. Afr. 50: 89.
- 1955. *New species of Raymondia from the Belgian Congo (Diptera Streblidae)*. Rev. Zool. Bot. Afr. 51: 208.
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